

**ELECTION UNDER 37 C.F.R. §§ 3.71  
AND 3.73 AND POWER OF ATTORNEY**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

The undersigned, being Assignee of record of the entire interest in the application for a United States Patent entitled "Sperm Specific Cation Channel, CatSper2, and Uses Therefor," the Specification of which was filed with the United States Patent and Trademark Office on April 21, 2004 and has been assigned Serial Number 10/828,975, by virtue of an assignment recorded in the United States Patent and Trademark Office as set forth below, hereby elects, under 37 C.F.R. S 3.71, to prosecute the application to the exclusion of the inventors.

The Assignee hereby revokes any previous Powers of Attorney and appoints the following attorney(s) and/or agents associated with Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, Massachusetts 02109, **Customer No. 23483**, so long as they remain with such firm, to prosecute the application, to make alterations and amendments therein, to transact all business in the Patent and Trademark Office in connection therewith, and to receive any Letters Patent to file any request for a certificate or correction that may be deemed appropriate.

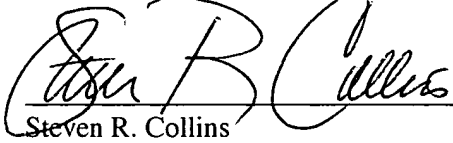
All correspondence should be sent to the following address:

Michael J. Twomey, Esq.  
WILMER CUTLER PICKERING HALE AND DORR LLP  
60 State Street  
Boston, MA 02109  
Telephone No.: (617) 525-6000  
Facsimile No.: (617) 526-5000

Pursuant to 37 C.F.R. § 3.73, the undersigned has reviewed the evidentiary documents, specifically the Assignment to Board of Regents, The University of Texas System, referenced below, and certifies that to the best of my knowledge and belief, title remains in the name of the Assignee.

ASSIGNEE: BOARD OF REGENTS,  
THE UNIVERSITY OF TEXAS SYSTEM

Date: 2/4/05  
ASSIGNMENT: Concurrently filed

By:   
Steven R. Collins  
Interim Vice Chancellor and General Counsel



**ELECTION UNDER 37 C.F.R. §§ 3.71  
AND 3.73 AND POWER OF ATTORNEY**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

The undersigned, being Assignee of record of the entire interest in the application for a United States Patent entitled "Sperm Specific Cation Channel, CatSper2, and Uses Therefor," the Specification of which was filed with the United States Patent and Trademark Office on April 21, 2004 and has been assigned Serial Number 10/828,975, by virtue of an assignment recorded in the United States Patent and Trademark Office as set forth below, hereby elects, under 37 C.F.R. S 3.71, to prosecute the application to the exclusion of the inventors.

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All correspondence should be sent to the following address:

Michael J. Twomey, Esq.  
WILMER CUTLER PICKERING HALE AND DORR LLP  
60 State Street  
Boston, MA 02109  
Telephone No.: (617) 525-6000  
Facsimile No.: (617) 526-5000

Pursuant to 37 C.F.R. § 3.73, the undersigned has reviewed the evidentiary documents, specifically the Assignment to Children's Medical Center Corporation, *referenced below*, and certifies that to the best of my knowledge and belief, title remains in the name of the Assignee.

ASSIGNEE: CHILDREN'S MEDICAL CENTER  
CORPORATION

Date: 2/4/05  
**ASSIGNMENT: Concurrently filed**

By: DP Lombardi  
Name Donald P. Lombardi  
Title Director, Technology Transfer

RECORDATION FORM COVER SHEET  
PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies)/Execution Date(s):

DAVID L. GARBERS  
TIMOTHY A. QUILL

Execution Date(s) JANUARY 19, 2005 & FEBRUARY 2, 2005

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Government Interest Assignment  
☐ Executive Order 9424, Confirmatory License  
☐ Other \_\_\_\_\_

2. Name and address of receiving party(ies)

Name: BOARD OF REGENTS  
THE UNIVERSITY OF TEXAS SYSTEM

Street Address: 201 WEST 7TH STREET

City: AUSTIN

State: TX

Country: USA Zip: 78701

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application or patent number(s):

☐ This document is being filed together with a new application.

A. Patent Application No.(s)

B. Patent No.(s)

10/828,975

Additional numbers attached? ☐ Yes ☒ No

5. Name and address to whom correspondence concerning document should be mailed:

Name: LISA N. GELLER, PH.D.

Internal Address: WILMER CUTLER PICKERING  
HALE AND DORR LLP

Street Address: 60 STATE STREET

City: BOSTON

State: MA Zip: 02109

Phone Number: 617-526-6000

Fax Number: 617-526-5000

Email Address: \_\_\_\_\_

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00

- ☐ Authorized to be charged by credit card  
☒ Authorized to be charged to deposit account  
☐ Enclosed  
☐ None required (government interest not affecting title)

8. Payment Information

a. Credit Card Last 4 Numbers \_\_\_\_\_  
Expiration Date \_\_\_\_\_

b. Deposit Account Number 08-0219

Authorized User Name LISA N. GELLER, PH.D.

9. Signature: L. N. Geller

Signature

FEBRUARY 11, 2005

Date

LISA N. GELLER, PH.D., REG. NO. 51,726

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents: 7

## ASSIGNMENT

WHEREAS, we, David L. Garbers, a citizen of the United States and residing at 3826 Waterford Way, Denton, TX 762102, an inventor and an agent of Howard Hughes Medical Institute which has a place of business at 4000 Jones Bridge Road, Chevy Chase, MD 20815-6789, and Timothy A. Quill, a citizen of the United States and residing at 1809 Haydenbend Circle, Grapevine, TX 76051, are the inventors of a certain new and useful invention and discovery, for which we have made an application for a United States Patent entitled "Sperm Specific Cation Channel, CatSper2, and Uses Therefor," the Specification of which was filed with the United States Patent and Trademark Office on April 21, 2004, and has been assigned Serial Number 10/828,975;

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned, do hereby:

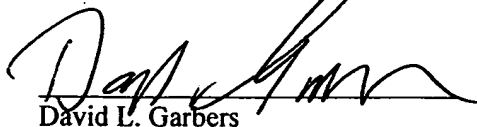
SELL, ASSIGN AND TRANSFER to Board of Regents, The University of Texas System (the "Assignee"), having a place of business at 201 West 7<sup>th</sup> Street, Austin, Texas, 78701, the entire right, title and interest for the United States and all foreign countries in and to any and all improvements which are disclosed in the application for United States Letters Patent, Serial No. 10/828,975 which was filed on April 21, 2004, and is entitled "Sperm-Specific Cation Channel, CatSper2 and Uses Therefor", such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such improvements to the Assignee;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned:

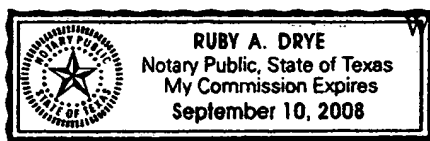
COVENANT, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; execute all rightful oaths,

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this 2<sup>nd</sup> day of Feb, 2005 (Month/Year).

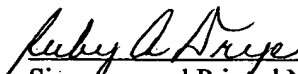


David L. Garbers  
on behalf of myself as an inventor and  
as an agent of Howard Hughes Medical Institute

On this 2<sup>nd</sup> day of February 2005 (Month/Year), before me personally came the above-named David L. Garbers to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of his own free will for the use and purposes therein set forth.



WITNESS:

 - Ruby A. Drye  
Signature and Printed Name

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_ (Month/Year).

\_\_\_\_\_  
Timothy A. Quill

On this \_\_\_\_\_ day of \_\_\_\_\_ (Month/Year), before me personally came the above-named Timothy A. Quill to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of his own free will for the use and purposes therein set forth.

WITNESS:

\_\_\_\_\_  
Signature and Printed Name

## ASSIGNMENT

WHEREAS, we, David L. Garbers, a citizen of the United States and residing at 3826 Waterford Way, Denton, TX 762102, an inventor and an agent of Howard Hughes Medical Institute which has a place of business at 4000 Jones Bridge Road, Chevy Chase, MD 20815-6789, and Timothy A. Quill, a citizen of the United States and residing at 1809 Haydenbend Circle, Grapevine, TX 76051, are the inventors of a certain new and useful invention and discovery, for which we have made an application for a United States Patent entitled "Sperm Specific Cation Channel, CatSper2, and Uses Therefor," the Specification of which was filed with the United States Patent and Trademark Office on April 21, 2004, and has been assigned Serial Number 10/828,975;

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned, do hereby:

SELL, ASSIGN AND TRANSFER to Board of Regents, The University of Texas System (the "Assignee"), having a place of business at 201 West 7<sup>th</sup> Street, Austin, Texas, 78701, the entire right, title and interest for the United States and all foreign countries in and to any and all improvements which are disclosed in the application for United States Letters Patent, Serial No. 10/828,975 which was filed on April 21, 2004, and is entitled "Sperm-Specific Cation Channel, CatSper2 and Uses Therefor", such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such improvements to the Assignee;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned:

COVENANT, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; execute all rightful oaths,

declarations, assignments, powers of attorney and other papers; communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the Assignee shall consider desirable for vesting title to such improvements in the Assignee, and for securing, maintaining and enforcing proper patent protection for such improvements;

TO BE BINDING on the heirs, assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_ (Month/Year).

\_\_\_\_\_  
David L. Garbers  
on behalf of myself as an inventor and  
as an agent of Howard Hughes Medical Institute

On this \_\_\_\_\_ day of \_\_\_\_\_ (Month/Year), before me personally came the above-named David L. Garbers to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of his own free will for the use and purposes therein set forth.

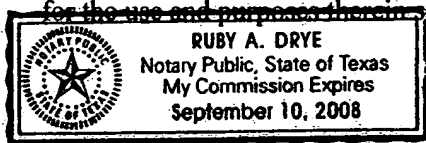
WITNESS:

\_\_\_\_\_  
Signature and Printed Name

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this 19<sup>th</sup> day of 01/05 (Month/Year).

Timothy A. Quill  
Timothy A. Quill

On this 19<sup>th</sup> day of January, 2005 (Month/Year), before me personally came the above-named Timothy A. Quill to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of his own free will ~~for the use and purposes therein set forth.~~



WITNESS:

Ruby A. Drye  
Signature and Printed Name  
Ruby A. Drye



FEB 18 2005  
U.S. PATENT & TRADEMARK OFFICE

RECORDATION FORM COVER SHEET  
PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies)/Execution Date(s):

DEJIAN REN  
DAVID E. CLAPHAM

Execution Date(s) JANUARY 20, 2005 and JANUARY 21, 2005

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Government Interest Assignment  
☐ Executive Order 9424, Confirmatory License  
☐ Other \_\_\_\_\_

2. Name and address of receiving party(ies)

Name: CHILDREN'S MEDICAL CENTER CORPORATION

Internal Address: \_\_\_\_\_

Street Address: 300 LONGWOOD AVENUE

City: BOSTON

State: MA

Country: USA

Zip: 02115

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application or patent number(s):

☐ This document is being filed together with a new application.

A. Patent Application No.(s)

B. Patent No.(s)

10/828,975

Additional numbers attached? ☐ Yes ☒ No

5. Name and address to whom correspondence concerning document should be mailed:

Name: LISA N. GELLER, PH.D.

Internal Address: WILMER CUTLER PICKERING

HALE AND DORR LLP

Street Address: 60 STATE STREET

City: BOSTON

State: MA

Zip: 02109

Phone Number: 617-526-6000

Fax Number: 617-526-5000

Email Address: \_\_\_\_\_

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00

- ☐ Authorized to be charged by credit card  
☒ Authorized to be charged to deposit account  
☐ Enclosed  
☐ None required (government interest not affecting title)

8. Payment Information

a. Credit Card Last 4 Numbers \_\_\_\_\_  
Expiration Date \_\_\_\_\_

b. Deposit Account Number 08-0219

Authorized User Name LISA N. GELLER, PH.D.

9. Signature: L. N. Geller

Signature

FEBRUARY 11, 2005

Date

LISA N. GELLER, PH.D., REG. NO. 51,726

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents: 7

## ASSIGNMENT

WHEREAS, we, Dejian Ren, a citizen of China and residing at 937 Clover Hill Road, Wynnewood, PA 19096 and David E. Clapham, a citizen of the United States and residing at 3 Atwood Street, Wellesley, MA 02482, an inventor and an agent of Howard Hughes Medical Institute which has a place of business at 4000 Jones Bridge Road, Chevy Chase, MD 20815-6789, are the inventors of a certain new and useful invention and discovery, for which we have made an application for a United States Patent entitled "Sperm Specific Cation Channel, CatSper2, and Uses Therefor," the Specification of which was filed with the United States Patent and Trademark Office on April 21, 2004, and has been assigned Serial Number 10/828,975;

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned, do hereby:

SELL, ASSIGN AND TRANSFER to Children's Medical Center Corporation (the "Assignee"), having a place of business at 300 Longwood Avenue, Boston, Massachusetts 02115, the entire right, title and interest for the United States and all foreign countries in and to any and all improvements which are disclosed in the application for United States Letters Patent, Serial No. 10/828,975 which was filed on April 21, 2004, and is entitled "Sperm-Specific Cation Channel, CatSper2 and Uses Therefor", such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such improvements to the Assignee;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned:

COVENANT, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; execute all rightful oaths, declarations, assignments, powers of attorney and other papers;

communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the Assignee shall consider desirable for vesting title to such improvements in the Assignee, and for securing, maintaining and enforcing proper patent protection for such improvements;

TO BE BINDING on the heirs, assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this 20 day of January, 2005 (Month/Year).

David E. Clapham  
David E. Clapham  
on behalf of myself as an inventor and  
as an agent of Howard Hughes Medical Institute

On this 20 day of JANUARY (Month/Year), before me personally came the above-named David E. Clapham to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of his own free will for the use and purposes therein set forth.

WITNESS:

Anthony Piccolo Jr.  
Signature and Printed Name  
Anthony Piccolo Jr.  
NOTARY PUBLIC  
MY COMM EXP: 8/5/2005

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_ (Month/Year).

Dejian Ren

On this \_\_\_\_\_ day of \_\_\_\_\_ (Month/Year), before me personally came the above-named Dejian Ren to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of his own free will for the use and purposes therein set forth.

WITNESS:

\_\_\_\_\_  
Signature and Printed Name

## ASSIGNMENT

WHEREAS, we, Dejian Ren, a citizen of China and residing at 937 Clover Hill Road, Wynnewood, PA 19096 and David E. Clapham, a citizen of the United States and residing at 3 Atwood Street, Wellesley, MA 02482, an inventor and an agent of Howard Hughes Medical Institute which has a place of business at 4000 Jones Bridge Road, Chevy Chase, MD 20815-6789, are the inventors of a certain new and useful invention and discovery, for which we have made an application for a United States Patent entitled "Sperm Specific Cation Channel, CatSper2, and Uses Therefor," the Specification of which was filed with the United States Patent and Trademark Office on April 21, 2004, and has been assigned Serial Number 10/828,975;

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SELL, ASSIGN AND TRANSFER to Children's Medical Center Corporation (the "Assignee"), having a place of business at 300 Longwood Avenue, Boston, Massachusetts 02115, the entire right, title and interest for the United States and all foreign countries in and to any and all improvements which are disclosed in the application for United States Letters Patent, Serial No. 10/828,975 which was filed on April 21, 2004, and is entitled "Sperm-Specific Cation Channel, CatSper2 and Uses Therefor", such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

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communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the Assignee shall consider desirable for vesting title to such improvements in the Assignee, and for securing, maintaining and enforcing proper patent protection for such improvements;

TO BE BINDING on the heirs, assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_  
(Month/Year).


\_\_\_\_\_  
David E. Clapham  
on behalf of myself as an inventor and  
as an agent of Howard Hughes Medical Institute

On this \_\_\_\_\_ day of \_\_\_\_\_ (Month/Year), before me personally came the above-named David E. Clapham to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of his own free will for the use and purposes therein set forth.

WITNESS:


\_\_\_\_\_  
Signature and Printed Name

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this 31 day of January, 2005 (Month/Year).

  
Dejian Ren

On this 31 day of January, 2005 (Month/Year), before me personally came the above-named Dejian Ren to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of his own free will for the use and purposes therein set forth.

WITNESS:

  
Signature and Printed Name

